

CLAIMS

What is claimed is:

1. An electrical static discharge (ESD) protection circuit, comprising:

two zener diodes which detect and pass ESD passing through a winding of a modem transformer, the two zener diodes being coupled to a ground plane via at least one coupling; and

a ground leg coupled to a chassis ground to divert the detected ESD to the chassis ground.

2. The protection circuit according to Claim 1, wherein the modem transformer has a primary winding coupled to an RJ-11 interface, a secondary winding is coupled directly to the modem, and the two zener diodes are coupled between first and second terminals, respectively, of the secondary winding and the modem.

3. The protection circuit according to Claim 2, wherein diverting the detected ESD prevents a lockup condition or malfunction of an integrated circuit of the modem after the ESD passes through the secondary winding from the RJ-11 interface.

4. The protection circuit according to Claim 2, wherein diverting the detected ESD prevents a lockup condition or malfunction of an integrated circuit of an electronic apparatus after the ESD passes through the secondary winding from the RJ-11 interface.

5. The protection circuit according to Claim 4, wherein the

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electronic apparatus further includes an integrated receiver decoder having a pay per view billing capability.

6. The protection circuit according to Claim 4, wherein the electronic apparatus comprising a video receiver.

7. The protection circuit according to Claim 1, wherein upon detection of the ESD, the two zener diodes conduct to pass the detected ESD to the ground plane, and the ground leg diverts the detected ESD passed to the ground plane directly to the chassis ground.

8. An electronic apparatus, comprising:  
a chassis having a chassis ground;  
a printed circuit board having a ground plane, a transformer and a modem coupled to a winding of the transformer; and  
an electrical static discharge (ESD) protection circuit having means for detecting ESD passing through the winding of the teleco transformer and means for diverting the detected ESD to the chassis ground.

9. The apparatus according to Claim 8, wherein the ESD detecting means includes two zener diodes coupled to first and second terminals of the winding of the transformer and to the ground plane via a ground coupling.

10. The apparatus according to Claim 9, wherein the diverting means includes a ground leg coupled to the chassis ground and to the ground plane.

11. The apparatus of Claim 9 wherein the winding is a secondary winding.

12. The apparatus according to Claim 9, wherein the transformer

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has a primary winding coupled to an RJ-11 interface, the secondary winding is coupled directly to the modem, and the two zener diodes are coupled between the first and second terminals, respectively, of the secondary winding and the modem.

13. The apparatus according to Claim 12, wherein diverting the detected ESD prevents a lockup condition or malfunction of an integrated circuit of the modem after the ESD passes through the secondary winding from the RJ-11 interface.

14. The apparatus according to Claim 12, wherein diverting the detected ESD prevents a lockup condition or malfunction of an integrated circuit of an electronic device after the ESD passes through the secondary winding from the RJ-11 interface.

15. The protection circuit according to Claim 14, further comprising an integrated receiver decoder with pay per view capability.

16. The protection circuit according to Claim 14, further comprising a satellite receiver with pay per view capability.

17. A method for protecting a modem from electrical static discharge (ESD), comprising the steps of:

bypassing the ESD passing through a secondary winding of a modem transformer;

coupling the bypassed ESD at a location on a printed-circuit board's ground plane; and

diverting the bypassed ESD to a chassis ground having a low impedance connection via a ground leg.

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